

早大理工トポロジーセミナーのお知らせ

The Kontsevich integral for bottom tangles in handlebodies

Gwénaél Massuyeau
(Université de Bourgogne)

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51号館18階18-06 セミナー室
Waseda University Nishi-Waseda Campus
51 st building, 18th Floor, room 18-06

Abstract

The Kontsevich integral is a powerful knot invariant taking values in the space of Jacobi diagrams. The category B of "bottom tangles in handlebodies" is a braided monoidal category which encapsulates knots and embeds into the category of $(2+1)$ -dimensional cobordisms with corners. In this talk, we will overview how the Kontsevich integral can be extended to a functor Z from B to a category A of "Jacobi diagrams in handlebodies", which turns out to be the PROP governing "Casimir Hopf algebras". This functor Z induces a canonical isomorphism from the associated graded of a certain filtration on B (which generalizes the Vassiliev-Goussarov filtration for knots) onto the category A . We will outline some other properties of the functor Z , such as its relationship with the TQFT-like functor that we constructed from the Le-Murakami-Ohtsuki invariant in a previous joint work with D. Cheptea. This is a joint work with K. Habiro.

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世話人： 村上 順 (早稲田大学基幹理工学部数学科)
e-mail: murakami@waseda.jp